

AMENDMENTS TO THE SPECIFICATION

Applicants respectfully request that the following amendments to the specifications be entered. No new matter is added by these amendments and they are being requested merely to correct typographical errors, and/or to provide conformance of the specification to the drawings as originally filed.

1. Please replace the paragraph of the specification on page 4, line 28 through page 5 line 3, with the following, to correct a typographical error.

The subscriber may use generated reports to do detailed marketing research. For example, the subscriber can determine from which geographical areas the greatest response was received following, for example, a given television advertisement and adjust its advertising strategy accordingly. The subscriber may also use the generated reports to assist in staffing decisions. For example, the subscriber can determine when during the day, and on which lines, ~~incoming~~ incoming calls were unanswered or met with busy signals.

2. Please replace the paragraph of the specification on page 6, line 31 through page 7 line 16, with the following to obtain consistency with a previous reference to block 14 in the specifications (page 6, line 22).

In block 14, the service provider processes the call records received from the telephone company. In order to do this, a number of functions are performed. The functions are illustrated by blocks in service provider ~~call-processing~~ block 14, and can be performed by any suitable, computer-based systems. In block 16, the system converts the call record data into a format that is compatible with the system's geocoding software and report-generating software. Also in block 16, the call records are matched to the subscriber. In block 18, the system audits and verifies the validity of the data. In block 20, the system geocodes the call data. Thus, for each call, the system attaches a geographic longitude and latitude corresponding to the location of the second party to the call (the subscriber being the first party to the call). In block 22, the call records and the geocoded

data are packaged into a call detail file. In block 24, the call detail data is delivered to the subscriber in a suitable way, such as via the Internet, on floppy disk or in paper form.

3. Please replace the paragraph of the specification on page 9, lines 1-9, with the following to bring the specification into conformance with drawing Fig. 2.

Next, the AIN call attempts file 36 and the AIN completed calls file 38 are combined to form one complete call record file, as shown in block 40. This call record file is then transmitted to the service provider by sending it to the service provider's ~~[[FTP]]~~ ~~[[()]]~~ File Transfer Protocol~~[[()]]~~ (FTP) server 42 server, or other appropriate means. In one illustrative embodiment, the telephone company will transmit the call record data to the service provider at least daily.

4. Please replace the paragraph of the specification on page 9, lines 10-26, with the following, to bring the specification into conformance with drawing Fig. 3.

FIG. 3 is a printout of a sample single call record 44 that might be transmitted from the telephone company to the service provider. Some of the significant fields include the subscriber billing telephone number (btn) 46, the number of the subscriber's line 48 used for the call, the time 50 and date 52 of the call, the line number of the calling party 54, the zip code 56 of the calling party ~~[[56]]~~, call type 58 and duration 60. Different telephone companies may transmit call records of varying formats. For instance, the call type ~~[[field]]~~ 58 field of one telephone company might indicate whether the call was answered, unanswered or met with a busy signal, while for a different telephone company might indicate whether the call was incoming or outgoing. Also, the subscriber has the option of receiving records for incoming calls, outgoing calls or both, and the call record will vary accordingly.

5. Please replace the paragraph of the specification on page 9, line 27 through page 10 line 3, with the following, to bring the specification into conformance with drawing Fig. 4, which has itself been amended to be consistent with the terminology in Fig. 1.

FIG. 4 provides a detailed breakdown of the ~~call~~ data processing performed by the service provider as shown in block 14 of FIG. 1. The service provider receives the call record files from the telephone company by any appropriate means. In FIG. 4, the service provider receives the call record data at its secured FTP ~~server~~ 42 server, as shown in block 62. In block 64, the FTP server is scanned for files received. Also in block 64, when raw files 66 are received, they are transferred, in one illustrative embodiment, to a local area network processing server.

6. Please replace the paragraph of the specification on page 10, line 4 through page 11 line 2, with the following, to correct a grammar and typographical error, and to further bring the specification into conformance with the previous reference to block 66 in the specifications, and to further maintain consistency with respect to references to the same block (page 10, line 1).

In block 68, the validity of the call record data raw files 66 is checked. The system searches for anomalies in the data by performing statistical analysis to determine if certain variables fall within established parameters. Examples of variables that are analyzed include the number of calls received, the number of busy calls received and the number of calls for which the status is unknown in a given time period. The system may also check to ensure that calls were received during all hours of the day to determine whether data transmission problems were encountered during any time of the day, or to determine whether the system was temporarily down during any part of the day. The current data is compared to collected statistical data to determine if the current data is generally in line with the collected data. The parameters will vary from one subscriber to another. For example, for one subscriber it may be acceptable for five percent of its calls to be of unknown status, while for another subscriber, one percent may be the highest acceptable percentage of calls of unknown status. The system adjusts the parameters over time and for new situations as new statistical data is collected. The validity check is performed at the overall level, as well as the individual subscriber level. For example, at the overall level, the system compares the newly received raw files 66, in the aggregate against the statistical data maintained for aggregate files. Then, the same types of checks are performed on ~~[[the]]~~ an individual customer basis. If the call

record data is deemed invalid, it is kicked out of the system and not processed further, as shown in block 70. If the data is deemed valid, processing continues at block 72.

7. Please replace the paragraph of the specification on page 11, lines 3-26, with the following, to bring the specification into conformance with drawing Fig. 4.

In block 72, the system verifies that the subscriber's account was active when the particular call was placed. If the account was terminated or not yet active, the data is not processed, as shown in block 74. In block 76, the call record data is converted into a format that is compatible with the service provider's geocoding software and report-generating software. Also in block 76, the call records are matched to the subscriber. In some cases, the telephone company will provide the customer number as part of the call record data. When that is the case, the system looks up the customer records in both a customer master ~~[[file]]~~ 78 and a line cross-reference ~~[[file]]~~ (line xref) 80. The customer master ~~[[file]]~~ 78 contains customer information (related to a given customer number) collected during an initial set-up procedure in which the customer's account is initialized. The ~~cross-reference~~ ~~[[file]]~~ line xref 80 contains a cross-reference between particular telephone line numbers and customer numbers. If the customer number is not in the customer master ~~[[file]]~~ 78 and the line number is not in the line xref ~~cross-reference~~ ~~[[file]]~~ 80, the call record is placed in a spin file for a suitable period of time (such as one month) and processing is re-tried at that time, as shown in block 82.

8. Please replace the paragraph of the specification on page 11, lines 27-34, with the following, to bring the specification into conformance with drawing Fig. 4.

If the telephone company does not provide the customer number, the system looks up the customer number in the line xref ~~cross-reference~~ ~~[[file]]~~ 80. If the line number is not in the line ~~cross-reference~~ ~~[[file]]~~ xref 80, again the call record is placed in the spin file for one month, as shown in block 82. Thus the output of block 72 is a good call record file in the service provider's format (good serv. prov. raw file) 84.

9. Please replace the paragraph of the specification on page 12, lines 1-12, with the following, to bring the specification into conformance with drawing Fig. 4.

In block 86, the call record data is geocoded. The geocoding process attaches to each call the precise longitude and latitude of the geographic centroid, or geographic center, of either the zip (postal) code, area code or exchange code of the second party to the call. Five geographic (geo) databases 88 are maintained, one each for nine-digit zip codes, five-digit zip codes, three-digit zip codes, area codes, and exchange codes. Each database contains the precise longitude and latitude of the geographic centroid for each respective zip, area and exchange code. Table 1 illustrates the geocoding hierarchy.

10. Please replace the paragraph of the specification on page 14, lines 7-21, with the following, to bring the specification into conformance with drawing Fig. 4, and to correct a grammar error that results from these changes.

The description now continues with respect to FIG 4. In block 86, the customer accumulator and line accumulator are also updated. The accumulators tally the number of call records processed during the current cycle for each line and for each subscriber. Cycles are illustratively weekly or monthly. The output of block 86 ~~[[is]]~~ are the call detail ~~[[data]]~~ records 90 which ~~[[is]]~~ are the aggregate of the call record data (good serv. prov. raw file) 84 and the corresponding geocoded data. The call detail records 90 are accumulated until the end of the cycle, at which time they are prepared for distribution to the subscriber. The call detail records are also stored in the customer balance and line balance (customer/line balances) ~~databases~~ 92 databases, which are used in the validity checks of block 68 and against which statistical analysis is performed.

11. Please replace the paragraph of the specification on page 14, line 22 through page 15 line 6, with the following, to bring the specification into conformance with drawing Fig. 5.

FIG. 5 illustrates the processing of the call detail records which takes place at the end of each cycle. The system first obtains the identity of a customer for which a cycle has ended and to which call detail records must be reported. This is indicated by block 93. In block 94, the system checks whether records have been processed for the given line or given subscriber (depending on whether calls are to be processed for all of the subscriber's lines or for just a given line) during the current cycle. If records have been processed, the call detail records 90 are collected as shown in block 96. In block 98, the system checks whether the number of call detail records 90 is equal to the value held in the accumulator (customer/line accums) 100. If it is not, there may be a problem with the call detail records 90 and the process is halted, as shown in block 102. If the accumulator (customer/line accums) 100 agrees with the call detail records, the calls are sorted as indicated by block 104 and cycle processing commences as indicated in block 106.

12. Please replace the paragraph of the specification on page 15, lines 7-23, with the following, to bring the specification into conformance with drawings Fig. 4 (blocks 78 and 80) and Fig. 5 (block 110), and to maintain consistency within the specifications (references to block 114).

In block 108, a customer delivery summary file (Cust Summary File) 110 is created. This file contains information regarding the subscriber's delivery preferences. This file is created using information obtained from the customer master [[file]] 78 and line xref ~~cross-reference~~ [[file]] 80. In block 112, a marketing message file 114 is created. The marketing message represented in the marketing message file may, for instance, be a logo, company name or other message and will later be placed on the output reports. This message is typically created by the telephone company. The customer delivery summary file (Cust Summary File) 110 and ~~customer~~ marketing message file 114 are then merged into a single summary/message file 116, which is used to determine whether the reports will be delivered to the subscriber in paper form, on floppy disk, or via the Internet or other suitable mechanism as shown in block 118.

13. Please replace the paragraph of the specification on page 15, line 31 through page 16 line 14, with the following, to bring the specification into conformance with drawing Fig. 1.

The Internet and diskette distribution methods are illustrated in FIGS. 6 and 7, respectively. FIGS. 6 and 7 correspond to the inputs to block 26 in FIG. 1. In both methods, first a file is created in an electronic reporting format, such as .PDF (paper document format) file, as shown in block 120. Then a self-extracting .exe (executable) file is created, as shown in block 122. For web distribution, the files are then copied to the service provider's Internet server delivery directory, as shown in block 124. In block 126, the service provider's web page is updated to make the new files available to the subscriber. The subscriber can then retrieve the files at the service provider's web site. Illustratively, for diskette distribution, after the .PDF and .exe files are created, they are copied to the customer service delivery directory, as shown in block 128. The files are then copied to floppy disk 130 and delivered to the subscriber.

14. Please replace the paragraph of the specification on page 16, line 21 through page 17 line 11, with the following, to bring the specification into conformance with drawings Fig. 5 (block 90) and Fig. 8.

Subscribers who choose web or diskette delivery are also illustratively provided with report-generating software, which they run on their own computer. The subscriber uses the report generating software to process the delivered data files, including the call detail records [[data]] 90, and generate reports relating to the call detail data. The subscriber may, if desired, view the raw call detail records [[data]] 90, a sample of which is provided in FIG. 8. The particular embodiment of call detail data illustrated in FIG. 8 includes the following fields: call date (CDATE) 132, call time (CTIME) 134, destination number (DN)136, calling party number (CPN)138, call type (CALL_TYPE)140 (incoming, outgoing), call disposition (CALL_DISP) 142, call status (CALL_STAT) 144, call duration (CALL_DUR)146 (in tenths of seconds), calling party name (CPN_NAME)148, postal (zip) code (POSTALCODE) 150 of the calling party, longitude 152 and latitude 154 of the calling party, and the value (Q_BYTES) 156 assigned to the longitude/latitude specification. The call disposition (call_disp) 142 and call status (call_stat) 144 fields work together to encode information about the call. For example, if call stat = 1 and call disp = 0, the call was

answered. If call stat = 0 and call disp = 2, the line was busy. If call stat = 0 and call disp = 3, the call was not answered. Other items can be encoded as well.

15. Please replace the paragraph of the specification on page 17, lines 12-26, with the following, to bring the specification into conformance with drawing Appendix A.

The report generator is capable of producing multitudes of different reports in three basic formats: table, graph or map. Appendix A is illustrative of a main screen which a user of the report generator software would first encounter. A quick summary 158 provides a brief synopsis of the call detail data. In report period 160, the user can select the dates for which a given report or set of reports should be generated. Clicking on the “Change Dates” 162 button with a mouse pulls up a calendar, an illustrative example of which is provided in Appendix B. The user clicks on the dates on the calendar to select the report period. The user is not limited to viewing data from the most recent time period. Rather, data from previous time periods may also be included in the reports.

16. Please replace the paragraph of the specification on page 17, lines 27-33, with the following, to bring the specification into conformance with drawing Appendix A.

In the report set selection 164 box, the user selects which reports should be generated. The user can choose among predefined sets of reports, determined by the service provider. These predefined report sets lump together various reports that may be useful for a specific purpose such as marketing or staffing, for example.

17. Please replace the paragraph of the specification on page 18, lines 1-17, with the following, to bring the specification into conformance with drawing Appendix A.

By clicking on the “customize report set” ~~button~~ 166 button, the user can also customize a report set so that each time the software is run, a predefined set of reports, selected by the user, will

be generated. Clicking on the “customize report set” 166 button pulls up a menu such as the one illustrated in Appendix C. The menu in Appendix C lists a variety of tables, graphs and maps. Other menus listing various other tables, graphs and maps can be accessed by clicking on the various buttons above the menu. To select which reports should be generated, the user clicks on the boxes 170 corresponding to the desired reports. In box 172, the user can select whether to have reports generated for incoming calls, outgoing calls, or both. At circle 174, the user can select to have reports generated for all of its lines, for a particular line, or for a selected group of lines.

18. Please replace the paragraph of the specification on page 18, lines 18-29, with the following, to bring the specification into conformance with drawing Appendix A.

Referring again to Appendix A, to view the selected reports, the user clicks on the “view reports” ~~button~~ 176 button. Appendix D provides an example of a table generated by the system. The table lists all of the zip codes from which calls were received in the given time period for the first time, and ranks them in terms of number of calls. Such information may be useful in developing and analyzing marketing and advertising strategies. The data in this table could also be presented in graph form, as could the data from any generated table.